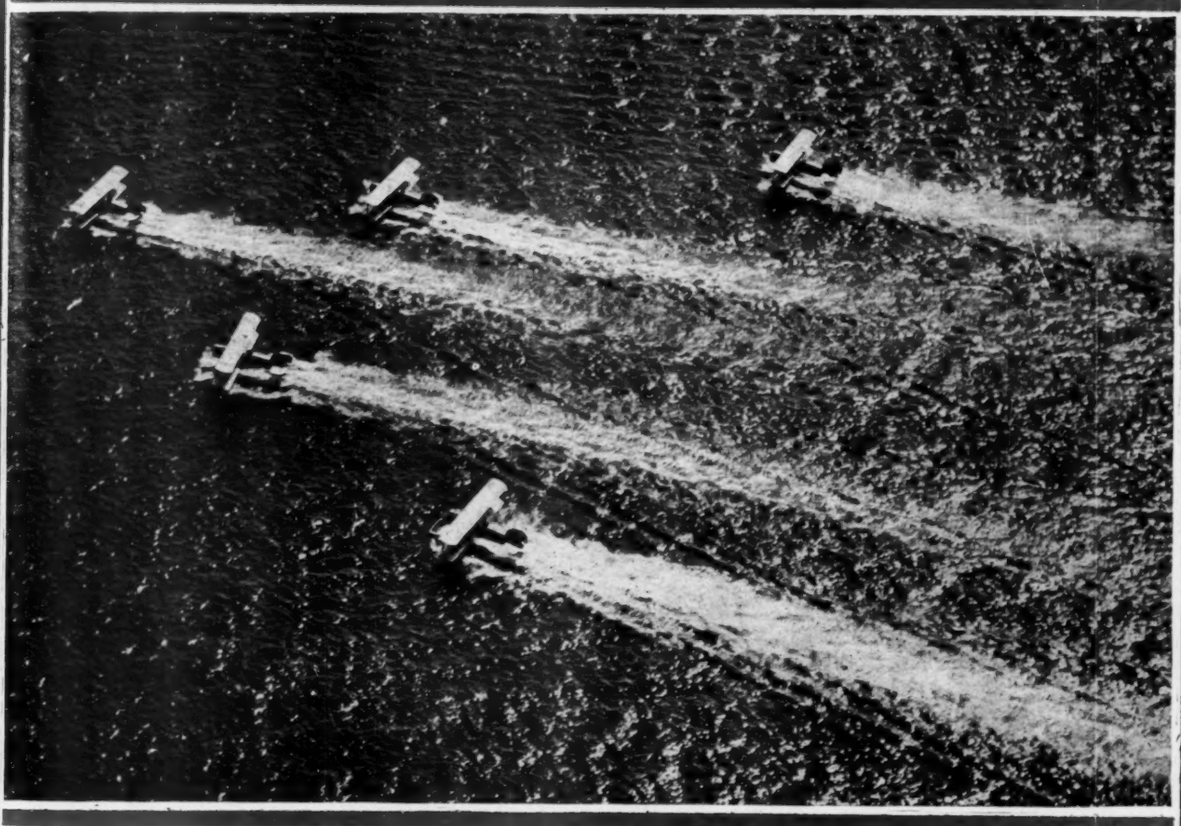
AVIATION

The Oldest American Aeronautical Magazine

DECEMBER 31, 1923 Issued Weekly PRICE 10 CENTS



Ready for emergency: U. S. Naval Torpedo Plane Squadron taking off

Official Photo, U. S. Navy

VOLUME XV

NUMBER 27

SPECIAL FEATURES

THE DUKE OF SUTHERLAND'S VISIT

REMINISCENCES OF THE WRIGHT BROTHERS

AIR SERVICE RESERVE OF SOUTHERN CALIFORNIA

A NEW PROCESS IN STEEL CYLINDER CONSTRUCTION

THE GARDNER, MOFFAT CO., INC.

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office at Highland, N. Y. under Act of March 3, 1879.

DECEMBER 31, 1923

AVIATION

VOL. XV. NO. 27

Published every Monday

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IN FAR AWAY CHINA

AVIATION Readers Encircle the World

The following letter has been received from Canton, China. It is typical of many that are received from readers throughout the world and shows how indispensible AVIATION is if a complete picture of the progress of American aeronautics is desired.

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"Enclosed please find ten dollars for which please renew my subscription to AVIATION. In the event that you have discontinued sending the magazine to my old address, please if possible send me the copies I have missed. AVIATION has been my greatest authority since the grass-cutter days of '16, as production manager of —— Works building airplanes during the war and later as field manager of a division of the Air Mail and now as aeronautical advisor to Dr. Sun Yat Sen in far away China.

"I have been a subscriber to your magazine since it was first published, in fact, I still have my first copy, now seven years old as well as all copies up until the time I came here.

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Vol. XV DECEMBER 31, 1923 No. 27

Aviation—1923

TWENTY years of the airplane have passed to history. Speed, endurance, altitude, load and power have all been improved to a point where further progress is going to be the result of engineering research and great expenditure. With the astonishing record of 1923 in mind it will be a very timid mind that does not project its imagination ahead a few years and see even the splendid achievements of this year left far behind.

The outstanding advances have been made in speed. Lieut. A. J. Williams, U.S.N., in the Navy-Curtiss Racer advanced the world's records to 266.59 mi./hr. for three kilometers (1.864 mi.); 243.81 mi./hr. for 100. km. (62. 14 mi.) and 243.67 mi./hr. for 200 km. (124.27 mi.). Lieut. David Rittenhouse, U.S.N., brought the Schneider Trophy to this country by establishing a new speed record for seaplanes of 177.38 mi./hr. Of the thirty-three world records, twenty-one have been captured by the Naval Bureau of Aeronautics and eleven by the Army Air Service.

The Army records include all records from 500 to 5300 km. and were accomplished by refueling in flight. Lieuts. Oakley Kelly and J. A. Macready made a world's duration record of 36 hr. 4 min. 31 sec. which was bettered later by Lieuts. Lowell H. Smith and J. P. Richter who were in the air 37 hr. 15 min. 43.8 sec

The commissioning of the Shenandoah and its spectacular flights over the country is an achievement of which the Navy can well be proud. The further development of the catapult and the cruises of the fleet air forces are also to the Navy's credit.

The Army Air Service commissioned and flew the Barling Bomber, the largest airplane yet constructed, and successfully sank the obsolete battleships Virginia and New Jersey. The cross continent non-stop flights of Lieutenants Kelly and Macready covering 2700 mi. in 26 hr. 50 min. and the non-stop flights of Lieutenants Smith and Richter from Canada to Mexico, a distance of 1200 mi. in 12 hr. 13 min. 40 sec. also are credited to the Air Service.

The Air Mail won nationwide praise by the success of its night flying experiments between Omaha and Cheyenne. The record of 26 hr. 41 min. from coast to coast was made. The regular service of the Air Mail has become so accepted that it is no longer considered an achievement but it still remains the outstanding commercial success in the flying world.

In the commercial field the skywriting came into its own. Not only has it proved to be a success from the advertising standpoint but it has demonstrated that such work can be conducted safely and on a business like basis. Aerial photography advanced to a position where it now has a recognized place in industry.

The Zeppelin-Goodyear arrangement will probably mean an advance in the lighter-than-air field for the coming year. Commercial operations of aircraft were below previous years although a total of several million miles were flown. The St. Louis Meet surpassed any similar event ever held. The use of aircraft in argriculture advanced in its use for crop survey, destruction of gypsy moth and boll weevil.

AVIATION in recording these achievements looks forward to a most successful 1924 and takes this opportunity to wish its aeronautical friends a happy and successful New Year.

An Air Minister's Visit

THE Duke of Sutherland, Under-Secretary for Air in the British Cabinet, whose stay in the United States has been of such short duration that he has only had an opportunity to visit the Eastern Cities, is a most interesting figure in the aviation world.

Not only is he a distinguished representative of British Nobility, and a man of large interests, but he has that rare distinction of being a member of a Cabinet where the Air Force is placed on a par with the Army and Navy. In some ways, The Royal Air Force is arousing more interest and is the center of more discussion in England than the British Naval and Military forces. The pioneer work of the British Air Force is being observed carefully by every other country and the comment from its representative on the aerial progress of Great Britain has been listened to with the greatest interest.

The Duke of Sutherland has been quoted as having said that Great Britain would welcome an Air Conference for the limitation of aircraft. Usually France is regarded as the nation that would object. In certain ways France might be pleased with such a conference as it could point to the basis of the agreement at the Washington Conference for the Limitation of Naval Armament and argue that France should be entitled to the largest air force. As we have mentioned before, until Germany and Russia can be included in any such agreement, we believe it is a hopeless idea.

The plans of the British Government to subsidize commercial air routes as outlined by the Duke are of the greatest importance. The formation of a single company to operate all the British air routes and the plans for airship lines to India and Australia indicate the alert attitude of Great Britain toward air problems. Unfortunately the words "subsidy" and "monopoly" are not popular in this country and while the English plan seems logical and practical, it holds little of promise for duplication here.

To have so distinguished a representative of the British Air Force come over and study our aviation is a great compliment. His friendly interest and courteous praise have created a very pleasing impression. His visit will have been of great importance to American aviation if it has shown the advantage to any country of having capable men who can place their devotion to air progress above all other interests.

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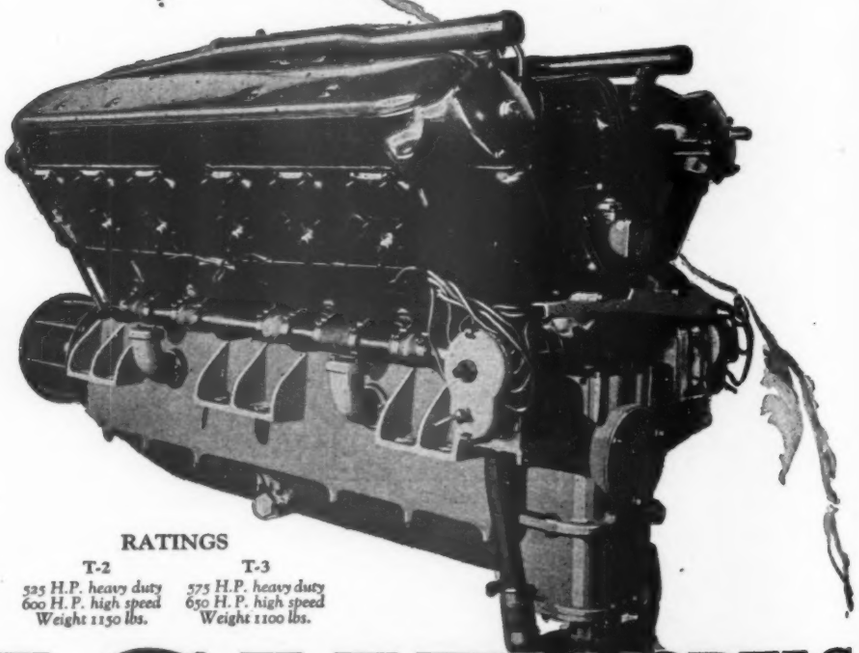
"The Identification of Incomparable Service"

Wright "T" Engines are being used in the multi-engine Navy PN-7 flying boat. Wright "T" Engines were worthy competitors in the recent races for high speed single seat planes both land and sea. They are equally well adapted for the intermediate planes such as bombers, observation planes and two seaters



RATINGS

T-2	T-3
525 H.P. heavy duty	575 H.P. heavy duty
600 H. P. high speed	650 H. P. high speed
Weight 1150 lbs.	Weight 1100 lbs.

WRIGHT T MODELS ENGINES

A New Process of Steel Cylinder Construction

By GLENN D. ANGLE

In charge of Airplane Engine Design, Engineering Division, Air Service

As better or more suitable materials and processes of manufacturing are developed, either through demand or otherwise, so will progress be made in the design of all articles to which these improvements are applied. Occasionally, a new application of a relatively old process will not only unfold surprising possibilities in improving certain designs but in reducing their manufacturing costs as well. An example of this nature is the application of the electric butt welding process (sometimes referred to as flash welding) to the construction of steel engine cylinders. As later shown, this process is particularly suited to the four-valve types.

Electric Butt-Welding

The four-valve welded-steel airplane engine cylinder is many times as difficult to design as one having only two valves. In the first place, with certain cylinder bore/stroke ratios, the valve diameter considered necessary for maximum

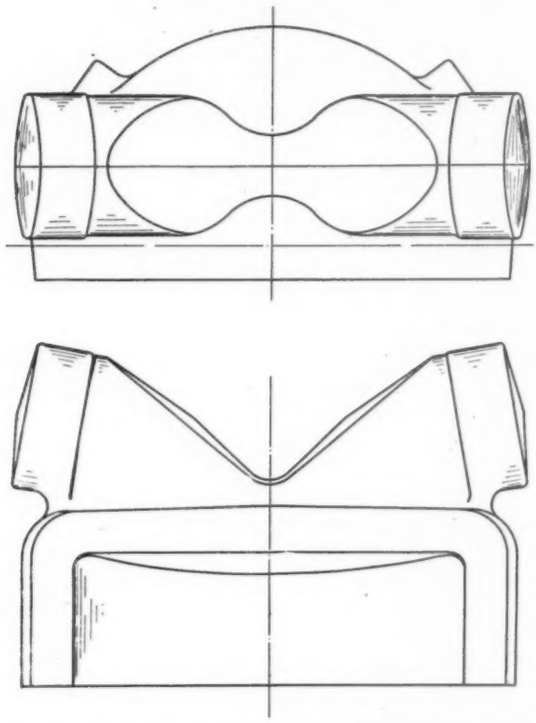


Fig. 1. Plan and end views of cylinder head forging

cylinder performance cannot always be used and still retain sufficient water space between each pair of ports for good valve cooling. The spherical or dome-shaped combustion chamber, which is undoubtedly one of the most simple forms, cannot be employed with four valves unless a very special rocker action is adopted to compensate for the tilted axes of the valves. Without further detailed reference, it is obvious there are numerous design problems in connection with four-valve cylinders, the nature of which will naturally vary among different sizes and types.

The strictly manufacturing difficulties, however, are the ones with which the designer is chiefly concerned. These may be encountered either in the forging, machining, or welding of the cylinder head and valve ports, and invariably require alterations of various sorts as well as considerable experimentation before satisfactory cylinders can be produced in large quantities with any degree of uniformity.

The type of construction, which is about to be described, apparently circumvents many of the most serious of these manufacturing problems by virtue of the butt welding process. That the methods are satisfactory has already been proven through the design and construction of a cylinder of this type; and as compared with the usual construction, figures on the cost of production show an almost incredible reduction of nearly 50 per cent.

The cylinder head is formed by welding together two identical forgings, the plan and end views of which are shown by Fig. 1 The principal feature of the design, which is made possible by this construction, lies in the fact that the valve port is forged as an integral part of the cylinder head instead of being forged and machined separately and then welded thereto according to the usual practice. The parting line of the forging die is in the plane of the valve port bosses. This allows the exterior of the port to be formed to size and therefore requires no additional machine operations. The draft stock on the outside diameter of the head can be later turned off so as to give an even thickness of metal around the cylinder head.

How Cylinder is Made

The forgings are first machined on the bottom to allow them to be accurately located, and also to give good electric contact with the copper welding dies. The surfaces which are to be joined are also machined, leaving on each about three-fourths of the wall thickness more than the final dimension from the cylinder axis to the plane of the valve ports. This also provides a reasonably smooth and clear surface for welding.

The forgings are then clamped in copper dies with the joining edges normal to the axis of the machine. The finished surface on the bottom is given full contact with the die and such other electrical contacts are made during clamping as to give uniform heating effects.

The cylinder head forgings are brought into contact and the electric current applied. In less than one minute, both have

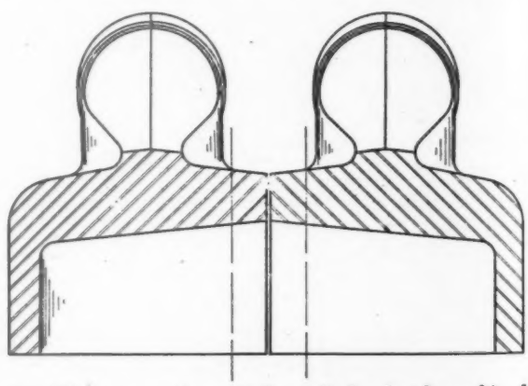


Fig. 2. The two sections of the cylinder head machined and in position to be electrically butt welded

reached a bright red heat about one-half inch on either side of the joint, due to the resistance of the gap. Hydraulic pressure is then applied, forcing the two halves together. After about three minutes and upon reaching the desired location, the current is automatically cut off and the pressure is relieved. The oxides, which are frequently a source of trouble in most types of welded joints, are in this particular process blown out in the flash.

A metallographic examination of the welded joint in one of these cylinders has proved that the welds are clean and well made, also tension specimens fracture beyond the weld in both untreated and heat treated material. It is concluded that

this method of construction is commercially feasible—being especially suited to quantity production—and presents many features which cannot be attained ordinarily with any other form of steel cylinder construction.

The feature of making the cylinder head and valve ports integral has many advantages. Perhaps the most important of these is the elimination of the usual weld employed in attaching the two. The heat applied in making this weld invariable distorts the valve port and causes sinking in the cylinder head, especially when the walls are thin or the weld is made close to the head. Attempts have been made to prevent distortion by clamping the parts in a specially designed fixture during welding, but the method has met with little success because the induced strains only relieve themselves as soon as the parts are removed from the fixture. Neither have other attempts to prevent the trouble, such as pre-heating the parts to be welded, or straightening them in a die, either cold or hot, after welding, been highly successful.

Overcoming Various Difficulties

One possible means of overcoming difficulties of this kind is to allow sufficient stock for finish machining after welding; but this is obviously not desirable, especially on the inside of the cylinder head. In some known instances, it has been

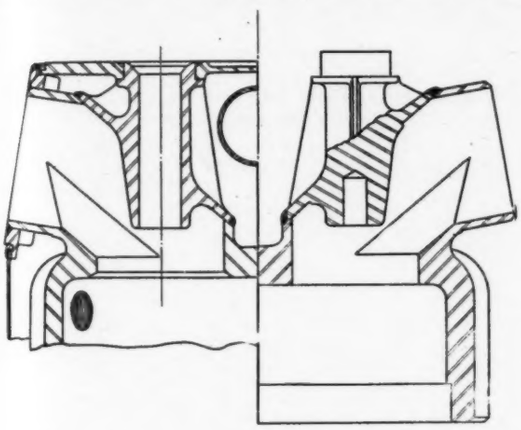


Fig. 3. The two final stages of construction

necessary to machine a recess around the valve seat after welding in order to insure the correct height of the valve and also an even width of valve seat. Although this is accounted for in the sinking of the head, it may be due perhaps in some cases to axial distortion of the valve guide boss.

The only practical means to avoid such conditions, other than that of making the head and valve port integral, is to raise the joint above the head far enough to obtain a uniform wall section for at least 3/16 to 1/4 in. each side of the joint. Satisfactory welds can then be made with less heat, and consequently less distortion, because the heat flow to heavier wall sections is not so rapid. Several instances are known in which raising the joint eliminated a great deal of trouble.

In four-valve designs, however, the height of the joint above the cylinder head has little to do with improving accessibility for welding. It is always more or less of a problem to make a satisfactory weld between a pair of valve ports which are close together. If the design does not actually prohibit making a satisfactory weld, it at least demands more time for its accomplishment.

Another objection often raised in connection with the welded-on valve port construction is the restriction to heat flow from the valve seat. A valve gives up its heat to the cylinder both by seat contact and through the valve stem. A large part of the heat given up to the valve seat is naturally conducted through the valve port walls. But if there is a welded joint with only partial continuity of metal, the heat flow is sure to be restricted. It is apparent that the type of construction herein described has no objectional features on that score.

The height of a cylinder should be held to a minimum for two reasons, the overall dimensions and weight of the engine. When the ports are made integral with the cylinder head, the usual space required for the welded joint between the valve port and cylinder head can thus be saved. This is best illustrated by Fig. 3, which also shows the construction of the valve guide boss.

The right-hand section of Fig. 3 shows the valve port opening, and the cylinder head partly machined, also the valve guide boss welded in place. The section at the left shows the completed cylinder with valve guide boss and valve seat machined, and the final welding of the port flanges, top plate, and water jacket.

It is apparent that this construction introduces a new shape in valve ports, and one which can be readily produced in steel since the machine operations are simple. Holes are bored concentric with the valve axis and normal to the port flange. The metal left after boring these holes is removed by a cutter, with a rounded end of the desired shape, that is introduced normal to the surface upon which the valve guide boss is welded. The sharp corners remaining are easily removed by filling so that the port can have a smooth contour, and the required cross sections in any plane normal to the direction of gas flow.

Tests so far conducted upon cylinders with no welded joint between the valve port and cylinder head indicate that the cooling of the valve seat is much improved, and it has also been shown that the valve stem is more effectively cooled with this design of valve guide boss. Beside the numerous features of this construction as conveyed by the above discussion, attention is drawn to the rigidity of the design which reduces the possibilities of failure in the welded joints of the water jacket. This construction may be widely varied in its application, the particular design shown here being only one of several possibilities.

A Comprehensive Air Program

During a recent visit to Dayton, Ohio, Assistant Secretary of War Dwight F. Davis advocated the adoption by the United States of a comprehensive aeronautical policy and outlined how, in his opinion, civilian organizations can be of great assistance.

He recommends the following:

(1) There should be appointed local committees for increasing commercial use of airplanes and giving thereto authentic publicity.

(2) There should be a special aerial section of all transportation committees for Chambers of Commerce and similar organizations, to study and publish data regarding aerial navigation.

(3) Vigilance committees of all Chambers of Commerce to prevent organization of "wild cat" aerial navigation companies.

(4) Commercial use of aircraft, by newspapers, department stores, express companies, real estate developments, photographers, surveyors and the like.

(5) Coordination of all private organizations by a national association to insure intelligent presentation of commercial service needs to Congress.

(6) Dissipation of the popular misconception regarding the safety and reliability of the airplane in commerce.

Secretary Davis further outlined what the government can do. He said:

"First, it should amend existing laws requiring competitive bids, for government aircraft so that experimental orders may be placed.

"Second, the standardization, as far as possible, of military, naval and mail types of aircraft.

"Third, turn the design of aircraft, as far as possible, to private industries, limiting its specifications for machines to capacity for performances, thus assisting in the building up of technicians capable of designing all types of aircraft.

"Fourth, promulgate all necessary rules governing the relation of aircraft to customs, immigration and public health services.

"Fifth, establish aerial traffic rules.

"Sixth, take up with other nations the matter of an international air code.

"Seventh, establish uniform rules for licensing of air pilots.

"Eighth, provide an inspection and license system for all aircraft.

"Ninth, prescribe air routes and provide all necessary aids to aerial navigation.

"Tenth, encourage the creation of air ports, owned and operated by private capital or municipalities.

"Eleventh, prescribe conditions to be met before official recognition would be extended to air ports.

"Twelfth, lend the assistance of its technical service to the standardization of commercial types.

"Thirteenth, collect and publish all vital statistics pertaining to aerial navigation.

"Fourteenth, adopt a ten-year building program for the aircraft required in the Army and Navy, thus enabling these services to replace their war-time equipment and insuring, during the present critical state of the aircraft industry some promise of continuing orders during the next few years.

"Fifteenth, train flying cadets in the Army and Navy, not only for the purpose of creating a corps of reserve officers for aviation duty, but also to insure civil aviation and well at its command an ample supply of well selected and well trained licensed aviators.

"Sixteenth, put its technical laboratories at the disposal of industries for the purpose of producing an all-metal airplane of American material."

The Army World Cruiser

McCook Field reports the arrival there of Lieut. Erik Nelson in the DWC biplane built especially for the proposed round-the-world flight, which he flew from Santa Monica, Calif., to McCook Field for test. Lieutenant Nelson reported a successful flight with the airplane behaving beautifully.

Lieutenant Nelson has spent most of his time in the last few months in Santa Monica, supervising the construction of the DWC, the plans for which were completed in July, and which was built in two months' time. Because of its ruggedness and weight carrying features, it has seemed the logical airplane to use for such a cruise, and it is expected that the thorough ground and flight testing of the airplane, engine and accessories, to which it is now being subjected, will bear out the judgement of the Air Service in its selection. This selection is by no means final, but entirely incumbent on the airplane's performance under these tests.

The DWC has a fuselage of welded steel tubing, braced with streamline tie rods and provided with stiffening gussets. The under carriage is convertible, the land type consisting of the divided axle form of chassis, with two 36 in. by 8 in. straight sided wheels and an articulated steerable tail skid. The water type undercarriage consists of twin pontoons to replace the land type, capable of withstanding rough water landings.

There are six aluminum gas tanks, with a total capacity of 600 gal. One, a 60 gal. gravity tank, is situated in the upper center section; the second (150 gal.) in the engine section just aft of the fire wall; the third (160 gal.) in the mid section below the pilot's floor; the fourth (105 gal.) in the tail section underneath the rear pilot's floor, and the fifth and sixth (62½ gal. each) in each of the lower wing stubs. Two terne plate oil tanks are mounted, one on each side of the engine, one with a capacity of 20 gal., the other holding 30 gal.

The radiator is of the nose type. A 10 gal. copper reserve water tank is installed in the pilot's cockpit, provided with an air pump so that the pilot may pump water from the tank to the radiator if necessary. There is an electric starter and the plane is equipped with dual control throughout. A hoisting ring will be provided for lifting the plane from the water to a dock or a ship's deck.

The plane is motored with a 1921 model standard Liberty engine, equipped with the Army type propeller hub and the latest type of navigation instruments. A radio direction finder will also form part of its fittings. In going over the speed course recently the ship made a speed of 105.4 mi./hr. at 1650 r.p.m., but it is thought this will be bettered.

It is expected to take several weeks to complete the testing at McCook Field, but when this has been accomplished, Lieutenant Nelson will pilot the cruiser to Langley Field for thorough water testing. If the DWC proves satisfactory, four more will be built to form the world cruise fleet.

Several previous attempts to encircle the globe by air have been made by the British and French, but without success. The accomplishment of a flight of this nature by the United States would, therefore, bring to the United States the honor and distinction of being the first nation to encircle the globe and would be quite in keeping with the present rapid development of aeronautics in which our country leads all nations of the world, in spite of the small appropriations available for experimentation and research in this new science.

A.C.C. Questionnaire

The Aeronautical Chamber of Commerce is compiling for the Aircraft Year Book, 1924, the data on the operation of commercial aircraft. All operating companies are requested to send to 501 Fifth Ave., New York, answers to the following questions:—

1. Was your record in the Aircraft Year Book for 1923? 2. Name of organization (if incorporated, so state and give capitalization and names of officers). 3. Location of main office. City, State, Street address. 4. Location of terminals. Places: (a) Owned or leased; (b) Size (acres); (c) Number and size of hangars; (d) Shop and repair facilities; 5. Equipment—give numbers, name and type of all aircraft and engines operated, thus—One Aeromarine Model 50B flying boat, Wright engine; One Curtiss JN4, OX6 engine, etc. 6. Approximately how many flights of all kinds have you made from Oct. 1, 1922, to Nov. 1, 1923? 7. What was the average duration of each flight? 8. What is approximate total mileage for this period? 9. How many passengers have you carried during this period? 10. How many pounds of package freight have you carried in this period? 11. What do you charge per passenger per short flight? 12. What is your charge per pound per mile for package freight? 13. Between what cities do you fly? (a) Regularly? (b) Occasionally? 14. What is your charge per passenger per mile for such inter-city flights? 15. What is your charge per hour for special trips. 16. Accidents. NOTE: Our purpose is not to make public accidents suffered by each company, to the consequent embarrassment of the company; it is to get as accurate an idea as possible of the number and cause of accidents and to draw helpful deductions. Your cooperation is earnestly requested. The name of your company will not figure in any connection with accident figures. (a) How many accidents of all sorts have you had in the period of this report? (b) How many fatalities? (c) How many injuries? (d) List the more serious accidents and give their cause somewhat as follows:— 1. Lack of public landing fields. 2. Lack of air routes. 3. Lack of weather reports. 4. Poor judgment by pilot. 5. Fault of accessory (specify). 6. Fault of plane (specify). 7. Fault of engine (specify). 8. Fault of gasoline or oil. Please send us interesting photographs and copies of pamphlets prepared and distributed by your organization. Noteworthy details of your operations: If you fly at Fairs, at how many places have you shown? How many people attended these Fairs? (estimate).

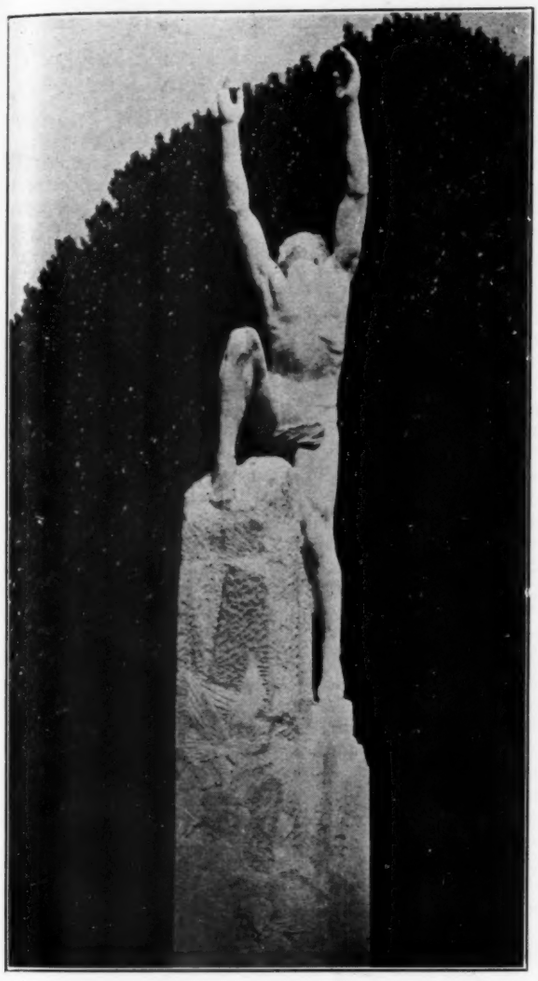
Lamblin Wins Patent Suit

At the Paris Aero Show of 1921-22 the Bréguet Co. exhibited a 19A sesquiplane equipped with a radiator which consisted of laminar elements very similar to those of the well known Lamblin type, except that the Bréguet radiator was built up around the nose of the fuselage instead of as a separate radiator unit.

With a view to protecting his patent rights, M. Lamblin immediately started a litigation against the Bréguet firm and the Société Moreux, which latter had also constructed laminar type radiators. This legal action has just been decided in favor of M. Lamblin by the Civil Tribunal of the Seine, the two defendant firms being condemned to pay a total of 10,000 francs of damages and to bear the cost of the action.

Early Reminiscences of the Wright Brothers

By CHARLES R. FLINT



Wright Memorial at Le Mans, France, symbolizing the accomplishment of human flight

The following chapter from "Memories of an Active Life," by Charles R. Flint is reprinted by permission of G. P. Putnam's, the publishers. At this time when the work of the Wrights has been so much in the news the recollections of Mr. Flint have a timely interest.—EDITOR.

The aeroplane was the creation of Wilbur and Orville Wright who, in 1905, were the first to climb into the skies in a "heavier than air" machine. The Europeans had talked about what they were doing, and world-wide publications announced what they expected to do. In 1908 a banquet was given in Paris to celebrate the success of the Wrights who by that time had excited considerable jealousy. A speaker, following Wilbur Wright, known as the man of silence, who had regretted that he was not an after-dinner orator, remarked that "among the feathered tribe the best talker and the worst flier is the parrot."

In the case of claims for discoveries or inventions, serious questions generally arise as to rights of priority. For this reason the courts usually refuse to grant injuctions until patents are adjudicated valid, but in this case the Wrights were flying while the rest of the would-be "heavier than air" machine navigators were trying to get off the ground; so the court naturally made an exception and granted the Wrights an injunction before adjudication.

The Wrights' High Principles

The Wrights were men of high principles and they were public spirited. When a partner of P. T. Barnum and I elaborated a plan to make a profit of several hundred thousand dollars by charging admission to see the Wright's wonder of the air and age, they refused the profit and the public were admitted free.

England was the first to seek information about the Wright aeroplane, and as early as 1904 Colonel Capper, head of the Royal Aircraft Factory, visited Dayton; but the Wrights were patriotic, and before they would sell the aeroplane to any other nation they wrote to Washington offering to turn it over to our government. The reply which they received was a "snippy" one, and quite in line with the policy which caused Hotchkiss to go to Paris to exploit his machine gun, and which resulted in our failure to adopt, adapt, exploit, and control the American submarine inventions of Bushnell, Holland, and Lake. It is a lamentable fact that most of our soldiers killed in Europe during the World War were killed by American inventions.

I first took an intense interest in the Wright aeroplane when our Mr. Ulysses D. Eddy visited them on Thanksgiving Day, 1906, at their home in Dayton.

U. S. Government not Interested

After the United States Government failed to take advantage of the Wright discovery, they asked me to offer their aeroplane to England.

In a speech made in London, Cobb once said "Blood is thicker than water," but owing to a patronizing speech made by the speaker who preceded him, he added, "Thank God for the 3,000 miles of water" and abandoned the speech he had prepared.

The Wrights, however, without any reservations whatsoever, gave England the opportunity to be the first to establish a navy of the air. I opened negotiations with Lord Haldane, the Minister of War, through Lady Jane Taylor, as I was satisfied that he would give her an immediate audience. I cabled to her offering for $500,000 ten aeroplanes that would each fly fifty miles. Haldane replied that a fifty-mile flight was too short, so I offered him twenty aeroplanes that would each fly 200 miles for $1,000,000. In reply Haldane told Lady Jane, "That's Yankee tall talk!" I then offered to exhibit the Wright aeroplane to Ambassador Bryce, at a club of which I was a member, about an hour's ride from Washington. I also offered to pay the costs of demonstration in England and to make a deposit in any bank in London His Lordship might name to be forfeited in case we did not make good. His Lordship then suggested to Lady Jane that we send over plans and specifications. For over two years the British government had been trying to get information about the Wright aeroplane; and I sent in cipher an appropriate negative characterized more by force than by elegance. Soon after I received the following letter from my Scotch friend Lady Jane:

British Official Interest

"You will be amused that I have been interviewed by order of the Post Office officially to find out whose code I am using, what the meaning of certain words is, and in fact to give the show away. The official sent left me much discomforted by the impracticability of my replies and fully persuaded of the truth of the Scotch saying, 'Ye can sit on a rose, ye can sit on a shamrock, but ye canna sit on a thistle!'"

The Germans were quicker than any others to recognize the great possibilities of the Wright aeroplane. It was exhibited by Orville Wright in a park at Berlin where there were thousands of people to witness the flight. When the aeroplane was taken across the field there walked in line behind it the Chief of Staff General Count Moltke, Orville and Miss Wright, Mrs. Flint, and myself.

After the Berlin flight, the newspapers stated that the Emperor had extended his hand to Orville Wright and congratulated him on his achievement. It was said that the Emperor's words were: "Mr. Wright, you have revolutionized modern warfare."

What the Kaiser Said

I question whether this statement would have been made by the Emperor under conditions where it could have been taken seriously. Such a remark might have been made to disarm suspicion regarding Germany's big aeroplane preparations. In fact the Germans were generally very diplomatic in regard to war preparations. They gave out sufficient information to maintain their prestige in affairs of war in order that German officers might be the military instructors of the world—even the Colombian soldiers at Bogota were taught the goose-step march; and in order to maintain their huge munition plants they encouraged orders from foreign nations. I was impressed by their prestige when Major H. R. Lemly, acting with my firm, went to China and other countries to sell woven military equipment. The fact that the United States had used it exclusively for five years had little influence; but when it was stated that the German government was considering its adoption, government officials became intensely interested.

Not long after the exhibition of the Wright aeroplane, the Emperor invited to a dinner twenty prominent men, the majority of whom were interested in the German dirigible enterprise, and told them that something ought to be done in Germany to develop the aeroplane. After coffee His Majesty retired, saying the German equivalent of "It's up to you." The imperial guests went down into their pockets, including Isador Loewe who contributed $40,000, and Rathenau who contributed a smaller sum. In 1908 we sold the Wright invention to a German company, and in 1909 the Emperor visited the Wright aeroplane factory in Berlin and inspected the machines.

Some years earlier, the Krupps had opened negotiations with us for the Lake submarine inventions. As an evidence of German prestige in affairs of war, Florio of Naples, hearing of our negotiations, paid our agent $40,000 in order to secure for Italy a six-month's option on what we were selling to the Krupps. But after the Germans had thoroughly satisfied their thirst for knowledge regarding Lake's inventions, by a careful examination of our plans and specifications, they omitted the formality of signing on the dotted line. Florio, inferring from this that the inventions were of no value, bid good-bye to his $40,000.

War Ministries Indifference

We offered the Wright aeroplane to every minister of war in the world, and wondered why our offers were unanimously treated with indifference. The explanation was simply that the Germans did not openly favor extensive use of the aeroplane for military purposes.

Their apparent indifference to aerial weapons represented only one phase of a well calculated plan. The Germans were perfectly willing to furnish the world with ordinary munitions; but they regarded such munitions as of secondary importance in comparison with their super-war armaments, super-aeroplanes, super-submarines, super-cannon—the cannon which destroyed the Liège forts—the cannon that fired on Paris at a distance of seventy miles. They realized that world preparedness was inevitable, but they were confident that the preparedness of other nations must prove inferior to theirs. While they amiably forged thunderbolts for foreign purchasers, they secretly did some super-forging on their own account.

In France we formed a company for the exploitation of the Wright inventions. Wilbur Wright sailed for France in May, 1908, and his first flight was made at Le Mans on August 8th, of the same year. The French did not make much progress in their experimenting with heavier than air machines until after the Wright flights at Le Mans, when they built aeroplanes based on Wright inventions, which they called "Wright machines." Contrary to general opinion, their was not an independent parallel development.

Rear Admiral Bronson, Mrs. Flint and I witnessed the Orville Wright-Selfridge flight at Fort Meyer, and saw the aeroplane fall. I rushed to the plane with Mr. Charles White of Baltimore who was noted for his powers of observation.

"Lieutenant Selfridge," he said, "will probably die—he does not move his fingers—but Orville does, and will probably survive."

Selfridge died that evening, the first man to be killed in a power airship.

Mr. Flint then and there made me promise never to go up in an aeroplane, and I have been as faithful as Irvin Cobb was when leaving the German army for tide water. The colonel made him give his word of honor not to leave the squad. Cobb knew enough German to understand the colonel's order to the captain: "If that man Cobb starts to leave the squad, shoot him at once!" Cobb told me later: "I never kept my word of honor so easily."

Lord Northcliffe's Homage

The Wrights invited me to be their guest when Lord Northcliffe visited Dayton to present Orville Wright with the Albert Medal. After lunch at the Wright home, where I sat at Orville's left, we adjourned to an auditorium where there were two thousand people. Governor Cox made a speech the style of which was somewhat redolent of the stump. After which Lord Northcliffe stepped forward and in a low but impressive voice said, "Let us rise and stand in contemplation of the memory of Wilbur Wright." He then and there won the heartfelt esteem of that audience and talked to them in a conversational way that recalled the manner of American Commonwealth Bryce. Northcliffe requested me to ask in his presence whether the Wrights were being taken care of by the business men of Dayton who were morally indebted to them as the founders of their aeroplane prosperity, as he desired that a financial understanding in the Wrights' favor should be made clear in his presence.

When on the train homeward bound, I invited Lord Northcliffe to dine at the Dower House, formerly occupied by the Lords Baltimore, to meet Justice McReynolds of the United States Supreme Court, Patrick Francis Murphy, Irvin S. Cobb, Major A. E. W. Mason, Robert H. Davis, and Captain, now Rear Admiral, Sir Guy Gaunt, Northcliffe's adaptability was shown by his reply: "I must leave immediately for London, but give me a rain check."

Whether that was American slang or whether he had in mind a "wet party" I know not; but the Dower House was just beyond the prohibition boundary of the District of Columbia.

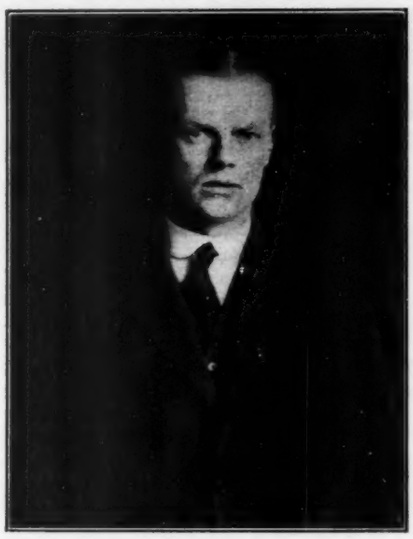
I had and have most pleasant relations with the Wrights. Mrs. Flint and I were of some service when Orville was injured in the fatal flight with Selfridge; but the Wrights and I did not always agree. Our discussions were always frank and both parties evinced a desire to arrive at wise conclusions, but the Wright brothers retained the power to decide on business policies. I told them that my experience had satisfied me that patents in themselves as a rule could not be relied upon; that there was not one patent in ten thousand which proved to be a basic or master patent; that success in the exploitation of inventions depended principally on preëmpting and extending the commercial field; that patent litigation was expensive, in the end generally unsatisfactory, and that it was not popular, as aggressive patent litigation interfered with the natural evolution of the art.

The Wrights were not lucky accidental discoverers: they were patient, intelligent, industrious investigators. At the outset they made use of existing scientific data but after their Kitty Hawk and Dayton experiments they decided that they would have to rely on their own investigations. They did not attempt to keep their work secret and sent their tables to Chanute, desiring to assist other investigators. But if our government had had the wisdom to secure the Wright aeroplane, Wright secrets would then have become state secrets.

The Wrights realized substantial sums from their inventions, but these were insignificant when compared with their scientific and practical accomplishments.

The Duke of Sutherland's Visit

British Under-Secretary for Air Studies American Aircraft Development



The Duke of Sutherland, British Under-Secretary for Air

The Duke of Sutherland, Under Secretary for Air in the British Cabinet arrived in New York on Dec. 18 to spend here about two weeks. He was met by Capt. C. M. G. Christie, British Air Attache to the United States. In a statement given to the press after his landing he commented freely on aviation both here and abroad. He said:

The Duke's Statement

"The United States and the British Empire, more than any other countries, should have an appreciation of the value of flying—the United States, because of the vast distance and great centers of population within a self-contained Continent and the British Empire, because of the strength of the Empire lies in the Dominions and the strength of the Dominions upon quick inter-communication and the necessity of guarding the imperial trade routes.

"It is a marvelous thing for a nation to say that its citizens were the first to demonstrate practical mechanical flight. The honor paid to the Wright Brothers on the occasion of the Twentieth Anniversary of the first flight was not confined to the United States. It is offered as well by English-speaking people everywhere. Furthermore, possibly the greatest tribute that could be paid to the Wrights is to be found in the importance with which aviation is regarded by the leading nations of the world.

"The purpose of my visit is to study, as Under Secretary of State for Air, the manner in which the United States has undertaken the development of flying by establishing personal contact with the Government Air Services and the industry through the Aeronautical Chamber of Commerce. While I have yet, of course, to form my definite opinions, it would appear that the American aircraft industry had registered astounding achievements, unaided by subsidy, in developing aircraft performance to the end that most of the world records are now held by the United States.

"England looks upon flying as an economic contribution as essential to commerce as shipping. Aviation should not be regarded as a menace, to be curbed. Application of aircraft will be according to national motive. Aviation ended England's insularity. England is now as much a part of Continental Europe as France or Germany. England's effort is to develop commercial flying, and at the same time provide for its air defenses in proportion to the size and importance of the British Empire. The only thought of competition in the air which England entertains is commercial competition. The English propose to link the Dominions together as closely as the British Isles have already been linked to the Continent. This is to be done by regular airship trips between England and India and later Australia.

English Interest in American Aviation

"England is especially interested in American aviation development in high speed, in carrying mails and express, and more recently, in developing airships. The American air mail experiment is unique and has attracted universal attention, particularly the experiments conducted in night flying last summer. The easiest and quickest approach to commercial aviation would seem to be in carrying goods. Having flown more than four miles a minute, what are you going to do with this speed? It may be applied practically to the uses of commerce. England's airship program undoubtedly will be influenced by American initiative. The construction of your Navy airship Shenandoah was a great engineering feat and the acquisition of German airship assistance a business stroke which is likely to have far-reaching effect.

"I have been misquoted in the newspapers as having stated that America is two years ahead of England in aircraft. The actual words were in one of the papers, 'Great Britain is about two years behind the United States in the development of aircraft as a result of having scrapped her planes after the war as an economic measure.' That is not correct. I stated that as far as lighter-than-air construction is concerned America was ahead of England because two years ago we scrapped all our lighter-than-airships for reasons of economy and are only now about to revive lighter-than-air. On the other hand, I believe, that as regards airplanes, we are holding our own very well with every country in the world, except numerically, we are inferior to the French.

"With regard to civil aviation, I believe we are ahead of America, partly, no doubt, on acount of the subsidies the British Government pays to operating firms. Rightly or wrongly, we believe in this policy for the purpose of fostering the growth of civil aviation at the start. Ultimately, when it becomes firmly established, it should become self-supporting. In view of this we have just inaugurated a large air transport company with one million pounds sterling capital to be raised privately, combining all air lines from London to the Continent, drawing a subsidy of one million pounds sterling or over four million dollars from the Government, spread over the next ten years, after which time we believe the company should be self-supporting.

Biographic Notes

The Duke of Sutherland is the bearer of one of the oldest titles in Europe. The dukedom was created only a century ago, but the earldom of Sutherland, of which he is the twenty-fourth incumbent, was created in 1228.

George Granville Sutherland-Leveson-Gower holds also the titles of Baron Strathnaver, Earl Gower, Viscount Trentham and Marquis of Stafford. He is the largest land owner in Scotland, his possessions there exceeding 1,000,000 acres, and he is also the owner of extensive tracts in western Canada, chiefly in Alberta. This is the first time he has visited the United States in an official capacity, although he has been here as a tourist several times. He is 35 years of age.

The Duke of Sutherland's service in the war was varied and distinguished. He did duty in the North Sea and was a member of the British Military Mission to the Belgian army.

Later he commanded a motor gunboat flotilla which was sent to Egypt and another which operated in the Adriatic.

The seat of the Earls of Sutherland, Dunrobin Castle, has been uninterruptedly in their possession for more than 700 years. The sixth Earl of the name figured extensively in Froissart's Chronicles. He was renowned for his military exploits. He married a sister of Robert Bruce. On the occasion of their marriage Pope Clement sent a special blessing from Avignon, in which he expressed the hope that their union would "prove an immediate remedy for the murders, forest burnings and depredations which cease not to happen in Scotland." Queen Victoria was a frequent vistor at Dunrobin Castle.

The present Duke of Sutherland is Lord High Commissioner to the General Assembly of the Church of Scotland; Hon. Colonel 5th Seaforth Highlanders, President of Sutherland Territorial Force Association and Hon. Commandant Sutherland Territorial Force Association. He was born in 1888 and succeeded his father in 1913.

Entertained at Dinner

The Duke was the guest at dinner at the Ritz-Carlton on Dec. 19 of Capt. C. M. G. Christie, British Air Attaché to the United States. Captain Christie's other guests were Frank H. Russell, vice-president of the Curtiss Aeroplane and Motor Corporation; R. F. Hoyt, chairman of the board of the Wright Aeronautical Corporation; Glenn H. Curtiss, F. B. Rentschler, president of the Chance Vought Corporation; J. M. Upperen, Dillon of Dillon, Read & Co., bankers; Leonard Kennedy, John W. Newlean, Grover Leoning, president of the Loening Aeronautical Engineering Corporation; Chance M. Vought, president of the Chance Vought Corporation; J. M. Upperen, president of the Aeromarine Plane and Motor Company; Lester D. Gardner, publisher of AVIATION; S. S. Bradley of the Manufacturers Aircraft Association; and L. K. Bell of the Aeronautical Chamber of Commerce.

The Duke, who has come to study American air progress, visited Mitchel Field on Long Island. He received a salute of fifteen guns. Maj. William N. Hensley, Jr., commanding, received him. On Dec. 20, he visited Lakehurst, N. J., where he saw the Shenandoah. He will continue south, inspecting various flying fields and stations. He leaves for England on the Aquitania on Jan. 5.

Calls on President Coolidge

While in Washington the Duke accompanied by Henry G. Chilton, Charge d'Affaires of the Embassy, called on President Coolidge. At the conclusion of the conference, which lasted for nearly half an hour, the Duke admitted that the question of calling another international conference to consider further disarmament on the part of the principal Powers of the world was among the topics discussed.

"The position of the British Government is well known. We favor an air conference," the Duke said. "In view of the general conditions existing in Europe, however, I do not believe that France would agree to any reduction in aircraft, and consequently a conference would be fruitless."

The British Secretary, whose call was arranged by the British Embassy primarily to allow him to pay his respects, said he discussed the general subject of aviation developments with the President, detailing some of the plans of the British Government, including the proposal for the dirigible service between the British Isles and India. He described the American Shenandoah, which he inspected at her Lakehurst hangar a few days ago, as "a wonderful ship," with a promise of great possibility.

Active A.C.C. Members

The Governors of the Aeronautical Chamber of Commerce, after reviewing the tasks performed by the Chamber, and discussing the problems which lie before it, at a special meeting held Nov. 15, unanimously adopted the following resolution:

Resolved: That a vote of thanks be given by the Board of Governors of the Aeronautical Chamber of Commerce to all those members, who by the prompt payment of their dues, have made possible the work of the Chamber, particularly in its cooperation with the Military and Naval Air Services, and in its efforts toward encouraging the use of aircraft in other Government Departments, and among the public in general."

The members to whom thanks and appreciation are thus extended are as follows:

Class A—Aeromarine Plane & Motor Co., Airships, Inc., Curtiss Aeroplane & Motor Co., Dayton Wright Co., G. Elias & Bro., Inc., Gallaudet Aircraft Corp., Loening Aeronautical Eng. Corp., Goodyear Tire & Rubber Co., Packard Motor Car Co., Manufacturers Aircraft Assn., Chance Vought Corp., Thomas-Morse Aircraft Corp., Wright Aeronautical Corp.

Class B—Aero Supply Mfg. Co., Aircraft Development Corp., Aluminum Co. of America, American Gas Accumulator Co., American Hammered Piston Ring Co., A. C. Spark Plug Co., H. Barber (Hartford Insurance), Arch. Black, Brewster & Co., Cox Klemin Aircraft Corp., Eastman Kodak Co., Electric Storage Battery Co., Eclipse Machine Co., General Aluminum & Brass Mfg. Co., Fairchild Aerial Camera Corp., Hammacher, Schlemmer & Co., B. F. Goodrich Rubber Co., Eberhart Steel Products Co., Haskelite Mfg. Corp., Stewart Hartshorn Co., Luftschiffbau-Zeppelin, Johnson Airplane & Supply Co., Maewhyte Co., Meisel Press Mfg. Co., Mosler Metal Products Corp., The Moto-Meter Co., National Aircraft Underwriters Assn., New Jersey Veneer Co., Night Aero Advertising Corp., Park Drop Forge Co., Pioneer Instrument Co., Remington-Burnelli Airplane Co., Rich Tool Co., Sky-Writing Corp. of America, Simms Magneto Co., Lawrence Sperry Aircraft Corp., S.K.F. Industries, Splitdorf Electrical Co., Sperry Gyroscope Co., Steel Products Co., Standard Oil Co. (Indiana), Stromberg Motor Devices Co., The Texas Co., W. Harris Thurston & Co., Inc., Titanine, Inc., U. S. Touring Information Bureau, Inc., Valentine & Co., Wamsutta Mills, Wolverine Lubricants Co., Wood & Spencer Co., Wyman Gordon Co., Zenith-Detroit Corp.

Class C—Heraclie Alfare, E. R. Armstrong, Ethel H. Bailey, Frank F. Baldwin, David Beecroft, L. K. Bell, W. N. Bennett, L. W. Bettiger, R. R. Blythe, S. S. Bradley, Vincent J. Burnelli, J. R. Cautley, A. J. Chalmers, Albert Champion, V. E. Clark, Fred H. Colvin, S. C. Coon, Henry M. Crane, Fritz Cremer, Glenn H. Curtiss, Curtiss Aero. Exp. Corp., Curtiss Metal Airplane Co., J. A. Davis, Richard H. Depew, Ladislas d'Orey, Leon T. Eliel, S. M. Fairchild, Earl N. Findley, A. J. Flachbar, A. H. Flint, E. F. Gallaudet, J. R. Gammeter, L. D. Gardner, W. L. Gilmore, C. J. Glidden, Grant Marine Motor Co., Charles Ward Hall, J. L. Harkness, C. D. Hanscom, William Hartman, H. E. Hartney, Beckwith Havens, H. H. Hirshen, Orton Hoover, George H. Houston, W. M. Huskisson, G. Sumner Ireland, Temple N. Joyce, W. Wallace Kellett, T. H. Kennedy, C. F. Kettering, C. Roy Keys, Alexander Klemin, H. T. Kraft, C. L. Lawrence, Lawrence Leon, Albert P. Loening, Grover C. Loening, Ludington Exhibition Co., Charles M. Manly, J. C. Mars, S. J. McMahon, George Mead, Hamilton Maxwell, F. L. Morse, R. B. C. Noorduyn, Joseph F. Meade, J. B. Parker, Alex. A. Pedu, Arthur Nutt, S. H. Philbin, H. D. Pope, C. G. Peterson, J. F. Prince, S. Albert Reed, H. J. Reilly, H. B. Ring, Robertson Aircraft Corp., Otto Praeger, John M. Rogers, Frank H. Russell, F. B. Rentschler, J. K. Robinson, Jr., Foster Russell Aviation Co., Edward Schildhauer, L. R. Seidell, Sikorsky Aero. Eng. Corp., A. R. Small, Daisy Smith, Lawrence Sperry, O. A. Shannon, Joseph B. Strauss, B. L. Smith, Wm. B. Stout, J. P. Tarbox, Robert G. Thach, H. E. Talbott, Milton Tibbetts, Triangle Airways, Inc., L. M. Upperen, Ralph H. Upson, H. Von Thaden, Walter T. Varney, J. G. Vincent, Harry Vissering, Chance M. Vought, Henry Wacker, E. P. Warner, George S. Wheat, P. J. Williams, G. M. Williams, Orville Wright, C. C. Witmer, J. P. Wood, W. C. Young, Paul Zimmermann.

New Coast Guard Chief

Comdr. Frederick C. Billard has been nominated Commandant of the U. S. Coast Guard, with the rank of Rear Admiral, to succeed Rear Admiral William E. Reynolds, who is to retire Jan. 1.

Air Service Reserve of Southern California

By LT. C. C. MOSELEY, A.S., U.S.A.

Commanding Clover Field, Santa Monica, Calif.

On account of the great expenditure of money and the large loss of personnel in the recent national emergency, due to the lack of trained Air Service pilots, the Government has considered it expedient to establish a number of flying fields throughout the country for the purpose of maintaining a nucleus of qualified, trained air personnel, in time of peace. It has provided certain flying equipment, hnagars, mechanics for maintenance, and a commanding officer and flight surgeon of the Regular Army to carry out this training. The large number of Air Service war-time officers, who now hold reserve commissions, are assigned to the various districts throughout the country.

Reserve officers from Clover Field, Calif., who made the 850 mi. cross country flight to San Francisco and return to attend the American Legion Convention. Standing (L. to R.): Lieuts. Watson, Kennedy, Clark, Shoenhair, Moseley, Brown, Lloyd, Finlay, Farran, Woolsten; kneeling (L. to R.): Lieuts. Morrison, Giles, Thomas, Moore, George, Benedict.

In conjunction with this training of the organized reserve, a new experiment is being made in the way of sponsoring legitimate civilian aviation throughout the country by allowing responsible civilian pilots to mantain hangars and operate from these Government fields, under the supervision and control of the Air Service and an authorized permit from the War Department. Such civilian concerns are required to render a monthly report of their activities to the War Department, and are subject to monthly inspections of their equipment by the officer in charge of the airdrome.

First Reserve Flying Field

Clover Field, located at Santa Monica, Calif. is the first of such fields to be placed in active operation. This field is an excellent flying field, about one half mile square, and is leased to the Government by the City of Santa Monica for a price of $1 per year. The city is compensated in a measure by the income from the pieces of ground leased to the civilian aeronautical concerns operating therefrom. Clover Field is named for Lieut. Greayer Clover, A.S., who was killed in an airplane crash in France during the War. Lieutenant Clover was a prominent citizen and athlete of Southern California.

It is interesting to note the enthusiasm and cooperation of the reserve Air Service officers in Southern California in the assistance they rednered to place Clover Field on an efficient working basis. For instance, the War Department, due to lack of appropriations, is able to provide only for the actual equipment required for this training, that is, two steel hangars, nine JN6HGI Curtiss airplanes, and one DH4B for the use of the commanding officer. No provision is made for a headquarters building, or for a hospital building for the flight surgeon with which to conduct examinations and give first aid treatment in case of accident, and no personnel is provided except the limited number of mechanics for maintaining the airplanes, and one night watchman at a salary of $100 per month. However, through the efforts of the commanding officer and the reserve officers, scrap lumber was obtained from Ross Field, Arcadia, and a headquarters and medical building was erected at Clover Field entirely by the reserve officers themselves. Although a tremendous amount of paper work is required of a field of this nature, no clerk is allowed, and, after months of struggling along, a man was finally secured who was familiar with Army paper work and who was willing to stay at the field at night and care for the clerical work of the post during the day.

Clover Field was formally dedicated on April 15, 1923, and this date marked the completion of the organization of the field and the opening of actual training operations. This field was particularly fortunate in being able to have Maj. Gen. Mason M. Patrick, Chief of Air Service, present on that day. General Patrick made the dedicatory address and the field was formally presented to the Government by the Mayor of Santa Monica. A total of seventy-two airplanes flew in and out of the field during the day and participated in the exercises. Visiting ships from Rockwell and Crissy Fields were among those present.

Splendid Showing at Clover Field

There are at present approximately 380 reserve Air Service officers attached to Clover Field, a considerable percentage of whom take active part in the training operations. Since April 15, 1923, Clover Field has accumulated over 1,000 hr. of flying, the number of flights participated in having reached approximately 3300. When it is realized

that all these reserve officers are engaged in business and are scattered all over southern California, it is believed these statistics are very creditable.

There are two completely organized squadrons of twenty-five officers each, one Pursuit and one Observation, and the enlisted personnel to complete these squadrons is rapidly being recruited. Actual war time tactics are practised. Battle formations are a regular thing. Under recent authorization, regular weekly cross country formations of from three to seven planes each have been made to San Diego and return; the distance between these two points is about 130 miles. The entire contingent of airplanes from Clover Field recently made cross country formation flight to San Francisco to attend the American Legion Convention. This flight was made in one day, with three stops enroute for refuelling.

A Fine Squadron Flight

The majority of these officers had never made a cross country of this length, and, since the distance is over 500 mi. and they were required to land in strange fields enroute, it is believed this can be considered an achievement for these reserve officers, particularly due to the fact that JN airplanes are hardly ideal equipment for long cross country flights.

On Air Service day at the American Legion Convention, a fifteen plane formation of JN airplanes, piloted by reserve officers of Northern and Southern California, and led by the Commanding Officer of Clover Field in a DH4B, flew low over the city of San Francisco and the bay, and received commendation from the Legion and the newspapers, as well as from the Assistant Chief of Air Service, General William Mitchell, who was present at the Convention. General Mitchell also commended the reserve officers of Clover Field for their cross country flight, which he considered epochal for reserve pilots with that type of equipment. He stated that he would recommend that more up to date service equipment be sent to this field for their use. After remaining in San Francisco for one week throughout the convention, the Clover Field formation made its return flight to its home station also in one day.

Numerous cross country flights have been made from time to time to nearby points, and recently to Seattle, Wash., by the commanding officer, accompanied by a reserve officer who photographed landing fields en route and at these various points. No appropriation is allowed for photographic equipment, but this reserve officer makes these pictures entirely at his own expense. An interesting collection of photographs of landing fields on the Pacific Coast is on exhibition at the headquarters building at Clover Field.

High Esprit de Corps

An exceedingly high *esprit de corps* is evident in the reserve organization at Clover Field. Whole hearted cooperation and assistance is rendered at all times. A Reserve Officers' Club was recently formed by the active members of the various squadrons, and a board of officers elected; First Lieut. Carleton W. Christian, A.S.O.R.C., was elected president. This club was formed for the purpose of promoting morale and promulgating the project of maintaining an organized, trained reserve for the Air Service. Through various channels open to the different members they are able to assist in the effort to obtain bigger appropriations and better equipment for the important, vital matter of training our pilots in time of peace.

Clover Field is the stopping point between San Francisco and San Diego, and on the direct air route between the northern and southern borders on the Pacific Coast. It has an average of two or more visiting airplanes each day of both the Army and the Navy.

The new Douglas World Cruiser was recently tested at Clover Field by Lieut. Erik H. Nelson and took off from here on its cross country flight to Dayton, Ohio. Much interest was also aroused during the past week among the reserve officers and residents of Southern California by the presence of the Martin Bomber which was flown across the country from Langley Field, Virginia by Lieuts. H. D. Smith and J. B. Whiteley. Reserve officers were taken for flights in the Bomber and it was on exhibition for several days to great crowds who visited the field daily.

It is hoped that, through performance and achievement, the Air Service reserve officers at Clover Field will be able to place before Congress a concrete example of the value of an adequate, trained reserve for this country. With practically no funds, and with obsolete, limited equipment, great strides have been made toward this point already. It is hoped that this vital issue will soon be self-evident. With a comparatively small increase in appropriations for the operation and efficient maintainance of such reserve fields, and some up to date service types of airplanes placed at the disposal of reserve Air Service officers, the United States will have at its instant command in case of a national emergency, an adequate, trained, efficient nucleus of an Air Force, which will not only be capable and ready for instant action, but which will contain a force of capable organizers who can be placed in charge all over the country of the organization and training of new Air Service recruits. Instead of the tremendous sums of money necessary to be expended, and the large loss of life which must come to an unprepared nation forced to mobilize on short notice, the tax payers of this country will be protected not only with a prepared military air force, but also from the necessity of expending enormous sums of money at such a time. By the appropriation of nominal, regular amounts to the training and maintenance of an organized reserve, this country will not only be safely protected, but such a project would be of great economic value and greatly reduce the cost of a war.

Aircraft Census

The Bureau of the Census is now engaged in collecting statistics of manufacturers covering the calendar year 1923. These statistics are compiled in accordance with the Act of Congress of March 3, 1919, and the schedules have been prepared after conference with the associations and others interested in the various industries. The schedules were mailed to the manufacturers on Jan. 2 and the Director of the Census is very anxious to publish the statistics at the earliest possible date in order that they may be of the greatest possible commercial value. The manufacturers engaged in the aircraft industry are urgently requested to forward their reports to the Bureau at the earliest possible date, preferably before the end of January. The Bureau has agreed to tabulate the results for our industry as rapidly as the schedules are received and publish the totals within a few days after the receipt of the last report.

The Bureau has been cooperating very closely with the industry and desires to be of service to us; we should in turn show our appreciation by complying with the request of the director to mail our reports promptly. If the reports are not made by mail it will be necessary for the Government to go to the expense of sending a special agent to the various establishments. It is hoped that the aircraft industry will heartily cooperate and make their reports promptly.

Nation-Wide Interest in Air Mail

In compliance with a request from the Post Office Department, the Aeronautical Chamber of Commerce undertook to ascertain the degree of interest in the Air Mail Service. A questionnaire was distributed to some 350 cities, ranging in size from New York and Chicago to remote towns in the south and west. To date about 225 replies have been received, and of these not more than half a dozen are apathetic. None is antagonistic. Requests for Air Mail Service come from the overwhelming majority. The Chamber is now digesting and analyzing these reports for presentation to the Second Assistant Postmaster General, Col. Paul Henderson.

Alaskan Mail to Go by Air

Air mail service between the Government railway terminus at Nenana and Fairbanks, Alaska, instead of the present railway and dog team delivery, is planned by the Post Office Department according to an announcement made at Spokane by Warren G. Vandervoort, Superintendent of the Railway Mail Service for the Pacific Northwest. Airplane service, it is estimated, would bridge these two points in four hours as against twenty days necessitated by rail and dog team delivery.

AIRPORTS AND AIRWAYS

Dayton Celebrates Flight Anniversary

The twentieth anniversary of the airplane was fittingly celebrated in Dayton, Ohio, its birthplace, where a large group of men prominent in aviation gathered to pay homage to Orville Wright. Among these were Admiral William A. Moffett, Chief of the Naval Bureau of Aeronautics; Maj. Gen. Mason M. Patrick, Chief of the Army Air Service; Carl E. Akeley, scientist, inventor, explorer and friend of Orville Wright; Vilhjalmur Stefansson, famous Arctic explorer and personal friend of the Wrights; Comdr. Mario Calderara, Italian Air Attaché at Washington; Capt. Georges Thenault, French Air Attaché; Col. Paul Henderson, Second Assistant Postmaster General, in charge of the Air Mail; Dr. G. W. Lewis, secretary of the National Advisory Committee for Aeronautics, and Howard E. Coffin, past president of the National Aeronautic Association.

The visitors were met at the station by a reception committee of nearly 1000 Daytonians, included among which were the most prominent men in the city, a self-appointed gathering to welcome the visitors to the city.

Orville Wright was visibly impressed as he received the visitors at the Union station. He shook hands warmly with each and the emotions of being thus honored showed on his face.

Following their arrival at the Union depot the honored guests of the city were taken on a tour of inspection of McCook Field.

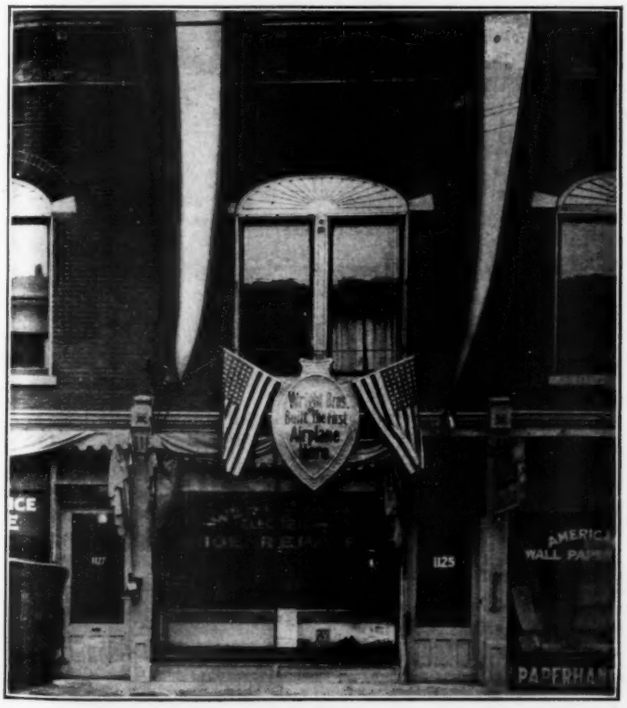
The whole party then visited Wilbur Wright Field, flying in government planes from McCook Field.

At noon, all were the guests of Orville and Katherine Wright at their Oakwood home.

Portraying in actuality the advances made by the airplane during the past twenty years, a fleet of airplanes, including one of each type used by the Army Air Service was flown over the Wright home in the afternoon. There were twenty-one planes in the fleet.

At 3 o'clock an aerial demonstration was given for the visitors and Daytonians at McCook Field by fliers from this and Wilbur Wright Field.

At a mass meeting held in the evening, General Patrick and Admiral Moffett told of the value of the Wright brothers' contribution to civilization and citizens of Dayton presented a plaque to Orville Wright.



The birthplace of the airplane. Store which was formerly factory of the Wright brothers and in which they built their first plane

Chicago News

By Otto Klein

After receiving its charter several weeks ago, the Chicago Chapter of the N.A.A. held a meeting Monday night, Dec. 17, at the Hamilton Club, at which the following permanent officers were elected: Pres., Gen. Leroy T. Stewart; Vice-Pres., Col. R. D. Smith; Sec'y., J. A. Colvin; and Treas., Maj. R. W. Schroeder.

Wm. P. McFarland, Comdr. Aviation Post American Legion, attended the meeting as the guest of his son, who is the first and only junior member of the N.A.A. in Chicago. Mr. McFarland promised to become a member and assured the members of the full support of his Post in all matters pertaining to the welfare of aeronautics. Mr. McFarland later had quite a discussion with M. L. Bromberg about bringing politics into the organization. Chairman Ferguson explained that politics would positively not be allowed to enter, but that it is sometimes necessary to employ the aid of a politician to put over things, which, however, should not put the organization under any obligation.

The question of landing fields was thoroughly discussed, and Willy Lenert, a flying real estate man, volunteered to look for a desirable field. Such a field must be found by next spring, and the location of same, it was unanimously decided, must be on the Northwest side, this side of town having the highest and best suited ground. The present fields are all flooded.

Wednesday, Dec. 19, an entertainment was given at the Sherman Hotel, fostered by the various aviation committees of Chicago, in commemoration of the anniversary of the birth of aviation. Films of the first Wright experiments, the St. Louis races, Army experiments at McCook Field and others were shown.

Michael Rubner had a narrow escape last week when the French propeller of his Mercedes Standard broke in midair. Rubner was over 8,000 ft. up, taking pictures, and glided from this height to the Midlothian Country Club, miles away.

Nimmo Black's Honduras bound ship, which promised to give us an interesting story, met with a mishap in the South and its pilot, W. W. Meyer, who at the last moment it was decided should go instead of Black, had to abandon the trip.

New York Flight Celebration

A squadron of Army airplanes, commanded by Maj. William N. Hensley, Jr., commandant of Mitchel Field, L. I., flew over New York City in formation at noon on Dec. 17 in commemoration of the birth of the airplane twenty years ago. Eighteen planes, among them the smallest and largest types in the Air Service, took part in the flight. The planes flew three times up and down the center of Manhattan Island, frequently dipping as a tribute to the Wright brothers, whose plane made its initial flight at Kitty Hawk, N. C., twenty years ago Dec. 17.

Japan Loses Airplane Carrier

Among the losses incidental to the disastrous earthquake which visited Japan early in the fall was the airplane-carrier Amagi, states Capt. Osami Nogano, Japanese Naval Attaché at Washington. At the time of the earthquake, the Amagi was under construction at the Yokusuka Yards. She was damaged so hopelessly that she will have to be scrapped.

U. S. ARMY AND NAVY AIR FORCES

U. S. ARMY AIR SERVICE

Army Orders

Orders July 16 First Lieut. Cyrus Bettis, A.S., amended directing Lieutenant Bettis, on arrival in U. S. and after any such leave as may be granted him, proceed to Selfridge Field for duty.

First Lieut. Horace N. Heisen, A.S., Langley Field to A.S., First Corps Area, Boston.

Capt. Ross G. Hoyt, A.S., Hawaiian Dept., to A.S. Primary Flying School, Brooks Field, for training, on completion present foreign service tour.

Capt. Hurbert V. Hopkins, A.S., Kelly Field to temporary duty Ninth Corps Area, San Francisco, Jan. 31; thence to A.S., Hawaiian Dept., Honolulu, transport sailing April 8.

Sec. Lieut. John K. Sells, A.S., (Cav.), Primary Flying School, Brooks Field, to Fourth Cav., Fort Sam Houston.

First Lieut. Bernard J. Tooher, A.S., Buffalo, N. Y., to temporary duty Ninth Corps Area, San Francisco, transport leaving New York City Dec. 5; thence to A.S., Hawaiian Dept., Honolulu, transport leaving San Francisco, Jan. 15.

Capt. James D. McIntyre, A.S. (Ord. Dept.), Primary Flying School, Brooks Field, to duty familiarizing himself with A.S. ordnance material and A.S. training methods in armament and related subjects.

Maj. Martin F. Scanlon, A.S., McCook Field to office Chief Militia Bureau, Washington, on expiration present leave.

Orders Oct. 11 First Lieut. esse E. Canary, Signal Corps (Inf.), completion temporary duty, meteorology course, Mc Cook Field, Dec. 31, to Signal Corps, Kelly Field, revoked.

First Lieut. Jesse E. Canary, Sig. C., (Inf.), completion course meteorology, McCook Field, Dec. 31, to Sig. C., Edgewood Arsenal, Md., relieving First Lieut. Giles F. Ewing, Sig. C., that station.

First Lieut. James C. Shively, A.S., Balloon and Airship School, Scott Field, from training to duty, that station.

First Lieut. Raymond S. Jett, A.S., now at station hospital, Fort Sam Houston, to report to Brig. Gen. Benjamin A. Poore, Pres., Army Retiring Board, Eighth Corps Area, that station, for examination.

First Lieut. James Flannery, A.S., Chanute Field, after 2 mos. 10 days' leave from Dec. 10, to A.S., Panama Canal Dept., transport leaving New York City Feb. 21.

First Lieut. Charles R. Forrest, A.S., Scott Field, to 17th F.A., Fort Bragg.

First Lieut. George G. Lundberg, A.S., from training Balloon and Airship School, Scott Field, to duty, that station.

Maj. William H. Garrison, jr., A.S., Bolling Field, to Walter Reed General Hospital, Washington, for observation and treatment.

Two months' leave to First Lieut. Charles N. Monteith, A.S.

Lieut. Hunter Suffers Fractured Back in Crash

Lieut. Frank O'D. Hunter, noted war pilot, with eight German planes to his credit, who is attached to the First Pursuit Group at Selfridge Field, Mt. Clemens, Mich, is spending the winter in the General Hospital at Buffalo, N. Y., suffering from a fractured back and a badly cut face. Hunter was returning to Selfridge Field from the flying carnival at Mitchel Field. After a number of narrow escapes and thilling experiences, which included flying through snow storms and fog in the Alleghenies and flying above the clouds with a missing motor, Hunter was finally forced to seek a landing field expeditiously when his motor quit completely. In trying to effect a 90 deg. turn to land in an open space his airplane fell in a spin, resulting in the injuries. His spinal cord was uninjured, and the surgeons at Buffalo are confident of complete recovery.

Aerial Exhibition at Wheeler Field

One of the most successful events of "Schofield Week," Oct. 1 to 6, was an aerial exhibition held at Wheeler Field, Hawaii, Oct. 3. Among the distinguished guests present were United States Congressman and Mrs. McLafferty of California, Acting Governor and Mrs. Brown of the Territory, Mayor and Mrs. Wilson of Honolulu, Major General and Mrs. Charles P Summerall, Major General and Mrs. Charles T. Menoher, Brigadier General and Mrs. Grote Hutcheson, and Brigadier General and Mrs. R. P. Davis. The Honolulu Ad Club attended in a body, several hundred strong, in full regalia of straw hats, white shirts, trousers and shoes, broad yellow sashes and yellow leis on hats and around their necks.

The object of "Schofield Week" was to bring the civilian and army population of the territory into closer and more cordial relations with each other. The fact that over seventeen thousand civilians came from Honolulu to Schofield Barracks, a distance of more than twenty miles to witness the flying demonstration is the best proof of the success of this event.

The combined personnel and equipment of both Luke Field and Wheeler Field were used during the morning, and all types of service planes in the Hawaiian Department were flown in formation review before the spectators.

Direct Course Flight

A cross-country flight, for the purpose of making tests on instruments and methods of navigation, was recently made by Lieuts. A. L. Johnson, pilot, and Mr. Mac Short, observer, from McCook Field, Dayton, Ohio, to Fort Riley, Kans. The entire distance of 675 mi. was made in one hop. A DeHaviland airplane equipped with a large fuel tank was used.

A direct course was held through the entire flight by the aid of the earth inductor compass. It permitted the fliers to navigate over the shortest route, that of an arc of a great circle and by flying at an altitude to receive full benefits of favorable wind currents. The distance was covered in 6 hr. 40 min., or at an average speed of 100 mi./hr. The first 350 mi. were traveled in or about the clouds, where no check on the ground could be made. Descending through the clouds after having completed this distance, the fliers came upon the Illinois River, which was directly in the course. This flight was one of a series being conducted by the Instruments and Navigation Branch, McCook Field; to develop and perfect accurate means of navigating direct courses through the air, instead of by ground land marks, railroads and cities, which often means a deflection from a straight line course and adds many miles to a cross-country journey.

New Training Ship Makes First Test Flight

The new Goodyear training airship, TA1, received at Scott Field, Ill., and erected in the airship hangar by a crew from the Goodyear factory, made its first test flight on Nov. 26, and performed excellently. The crew included Lieutenant Clark, Mr. Brannigan (Aeronautical Engineer of the A.I.D.) and two representatives from the Goodyear Tire and Rubber Co., of Akron, Ohio. Additional test flights were made the following day, and the ship was then turned over for service as an instruction ship to the 9th Airship Company.

The TA2 has also been received from the factory, and is now being erected at Scott Field. Upon completion and test it will be turned over as an instruction ship to the 8th Airship Company.

MB3 Pursuit Airplane in Philippines

Considerable excitement was recently caused at Camp Nichols, Rizal, P.I., by the testing of the first MB3 Pursuit plane flown in the Philippine Islands. Lieut. A. W. Vanaman, of the 66th Service Squadron, proved himself a very capable pilot in the handling of this type of plane.

Activities of the 23rd Photo Section

The activity report for the month of October of the 23rd Photo Section stationed at Post Field, Okla., shows that photographic work embraced mosaics of Fort Reno, Okla., and the Red River oil district near Wichita Falls, Tex.; prints for the use of Field Artillery School classes; photographs of the Oklahoma flood district; and a mosaic of the area between rivers west of Oklahoma City for use of commission in solving flood problem.

Some High Jumping at Selfridge Field

At Selfridge Field, Mt. Clemens, Mich., recently, Corporal Webb of the 57th Service Squadron, and Private Crane of the 94th Pursuit Squadron, indulged in a competition for the high altitude record for parachute jumps. Crane pushed his record up to 17,000 ft., and Webb topped this mark the following day when he jumped from 19,600 ft.

U. S. NAVAL AVIATION

Aircraft Squadrons in Winter Maneuvers

The Aircraft Squadrons of both the Scouting Fleet and the Battle Fleet will leave for southern waters during the first part of January to take part in the combined maneuvers of the two Fleets. The Aroostook, Jason and Gannet will carry the planes of the Battle Fleet to the West Indies, and the Wright, Sandpiper and Teal will tend the planes of the Scouting Fleet on their flight south. The light cruisers, with planes on board, will take part in the maneuvers, as will the planes on board the battleships fitted with catapults. The following squadrons will participate. Battle Fleet, VO Squadrons One and Two, and VT Squadron Two, less Division at Pearl Harbor, T.H. Scouting Fleet, VT Squadron One, VS Squadron One and VO Squadron Four, the planes of the latter squadron being on the light cruisers. VF Squadron Three, on the Langley will also participate in the maneuvers. The Langley will not remain in southern waters during the entire maneuvers, but will go to the Naval Air Station at Pensacola for experimental work after having taken a part in the first problems of the maneuvers. Marine Corps aviation will furnish a Division of six DT planes from the First Aviation Group, Marine Barracks, Quantico, Va., and a Kite Balloon Company from the same station.

The U.S.S. Wright and the U.S.S. Sandpiper, aviation tenders for the Aircraft Squadrons Scouting Fleet, are at present undergoing overhaul at the Navy Yard, Philadelphia, and the U.S.S. Teal is undergoing overhaul at the Boston Navy Yard. The personnel of the Aircraft Squadrons Scouting Fleet are at Philadelphia with the Wright, and are attending classes in radio, strategy and tactics, and communications, in preparation for the winter maneuvers with the Fleet. The planes of the Aircraft Squadrons Scouting Fleet are at the Naval Air Station at Hampton Roads in charge of a detail. The planes are being overhauled by the detail to prepare them for the maneuvers.

The Aircraft Squadrons Battle Fleet, based at the Naval Air Station at San Diego, Calif., are busily engaged in practice operations in preparations for the forth-coming maneuvers with the Fleet in southern waters. The planes of the Squadrons are being overhauled and conditioned for the exercises and the Observation Squadrons have been conducting spotting drills with the units of the Fleet based at San Pedro almost continuously, the Torpedo Plane Squadron, (VT2) has been engaged in practice dropping of torpedoes. The entire organization is looking forward with much enthusiasm to the coming maneuvers.

Navy Will Not Make World Flight

News reports to the effect that the Navy will engage in a competitive around the world flight with the Army early in the coming year were denied by Secretary Denby today. The Secretary stated that there would be no round the world flight by the Navy during the coming year.

The fact that the Navy Department is assembling in Washington the personnel for a long distance scouting squadron, for operations with the Fleet and that this work is being pushed with the hope that the new squadron will be organized and equipped in time to enable it to participate in the coming Fleet Maneuvers was offered in explanation of the report.

There has recently developed for the Navy a new long distance scouting bombing and torpedo plane, known in official circles as the CS1. This plane has a radius of 2,000 mi. or more, when equipped as a long distance scout. It would lend itself to extensive operations over land or water, being convertible from a land plane to a seaplane by the substitution of pontoons for wheels as landing gear. The first of these planes has already been delivered and has undergone extensive tests and production on others of the same type is being pressed.

While the Navy has given thought to the project of an around the world flight and a trans-Atlantic flight since the NC4 made the flight across the Atlantic, the needs of the Fleet as regards aircraft, are considered of paramount importance at this time, and planes that would be suitable for ambitious flights of this character will be placed in Fleet service as soon as available.

It is expected that the new squadron which is in the process of organization will be perfected in time to join the combined Fleets in Southern waters in the late winter or early spring.

Seaplane Rescues Men Adrift

One hundred and fifteen miles out at sea, in the Gulf of Mexico, an F5L seaplane from the Naval Air Station at Pensacola, Fla., on Dec. 17 rescued three men who had been adrift in an Eagle Boat for three days. On Dec. 13, the U.S.S. Bay Spring, with Eagle Boats 43 and 53 in tow, left Pensacola for Key West. On board Eagle Boat 43 were three men, there being none on the other Eagle Boat. On Dec. 14, when about 110 mi. south of Pensacola, the tow line parted, immediately followed by the propeller of the Bay Spring being disabled, which rendered her completely helpless in so far as picking up the Eagle Boats was concerned, which soon drifted from her. Upon the receipt of the report of the accident the U.S.S. Allegheny and the Coast Guard Cutter Tallapoosa were dispatched from Pensacola to assist the vessels in distress. The next day two other vessels, from Tampa and Key West left on the same mission. The Bay Spring was located, and taken in tow by the cutter Tallapoosa, but the Eagle Boats were not found, so on the 16th two seaplanes from the Naval Air Station at Pensacola were sent out in search, followed by four more planes on the next day. Due to the limited supply of provisions and fresh water on the Eagle Boats the situation was rapidly becoming acute, when they were located by a Pensacola plane on the 17th. The seaplane landed near the boats, removed the three men and returned with them to Pensacola. The position of the two Eagle Boats was given to the vessels searching for them by the plane.

Lt. Comdr. Grow, Leaves for Peru

Lt. Comdr. H. B. Grow, U.S.N., is leaving the Bureau of Aeronautics the latter part of this week to go to Peru, where he will reorganize the naval aviation forces of that country. There is already a small U. S. Naval Mission in Peru, headed by Capt. Clark Woodward, U.S.N. Commander Grow is leaving New York on the S.S. Santa Anna shortly after Christmas. He has been in the Plans Division of the Bureau for the last year. He has been relieved in that Division by Lt. Comdr. H. T. Bartlett, formerly Aid to the Chief of Bureau. Lieut. George D. Price, U.S.N., formerly with VS Squadron One, Aircraft Squadrons Scouting Fleet is now Aid to the Chief.

Trials of PN7 at Naval Aircraft Factory

The trials of one of the two PN7 planes being constructed at the Naval Aircraft Factory at Philadelphia is now underway. The PN7 is a modified F5L, with shorter span wings having a greater lift, and two Wright T2 engines instead of the two Liberty engines used on the F5L. It is expected that the PN7 will show a performance considerably better than that of the F5L.

Naval Arctic Air Board Presents Plan

The Naval Board on the exploration of the North Arctic regions by the Navy, on Dec. 12 submitted a preliminary report to the Secretary of the Navy.

Orders to Officers

Lieut. Hugh F. A. Baske, (MC) detached Naval Air Station San Diego to U.S.S. Rigel.

Lieut. Howell C. Johnston, (MC) detached VT Squadron One, Aircraft Squadrons Scouting Fleet, to temp. duty courses instruction, Nav. Medical School, D. C.

Lieut. Deane H. Vance, (MC) detached Nav. Hosp. Norfolk, to VT Squadron One, Aircraft Squadrons Scout. Flt.

Lieut. (jg) William H. Hainder, detached U.S.S. Wright, to temp. duty under instruction, Nav. Air Sta. Pensacola.

Ens. Apollo Soucek, detached U.S.S. Mississippi, to temp. duty under instruction, Nav. Air Sta. Pensacola.

Gun. Otis R. Adams, detached U.S.S. Aroostook, to Comdr. in Chf., Battle Fleet.

Gun. Ralph T. Bundy, to continue duty Nav. Air Sta. Pensacola, approved by Comdt.

Gun. William R. Daniel, detached U.S.S. Wright, to Scouting Fleet.

Gun. Fred E. Nickel, detached Nav. Air Sta. Hampton Roads, to Scouting Fleet.

Gun. John T. Robertson, detached Nav. Air Sta., Lakehurst to Scouting Fleet.

Lieut. (jg) Richard F. Whitehead, detached U.S.S. Lawrence, to temp. duty U.S.S. Wright. (Order of Dec. 8)

Pressure Distribution Tests on C7

The pressure distribution tests with the non-rigid airship C7, which have been going on for over a year at the Naval Air Station at Hampton Roads, Va., are being completed. The purpose of these tests has been to determine the magnitudes and distribution of the air pressures on the envelope and control surfaces of the airship while it was flying at various speeds and in various positions. The results have proved to be of great value, and many of them were used in connection with the design of the rigid airship "Shenandoah." To obtain further information for use in the design of possible future rigids, it is contemplated that a series of similar tests will be conducted with the "Shenandoah." This investigation was undertaken only after exhaustive preparations which occupied the better part of a year, so that the results now obtained represent two years of work. The analysis of the thousands of readings which have been taken is now in progress. This in turn will require a period of months. The taking of readings and their analysis is done by the Langley Field staff of the National Advisory Committee for Aeronautics, which has been cooperating with the Navy on this important project.

VF Squadron One in Night Flying Exercise

The following is quoted from a report from the Aircraft Squadrons Battle Fleet on a recent night flying exercise held by VF Squadron One at San Diego. "This Squadron conducted a night flying practice obtaining much valuable information with regard to night landing and illumination of the field. Landings were made by the aid of two searchlights with beams diffused to greatest extent at an angle of 30 deg. to the landing direction. Six ground flares were used 200 ft. apart in line with the searchlights and parallel to the landing direction. Three planes were used for flying. Two were in the air at all times with one remaining on the operating line. Forty landings were made and thirteen parachute flares were dropped. There were no casualties and the promptness with which the practice was conducted was highly commendable." Record machine gun firing was commenced by officers of VF Squadron One on Dec. 6. Four pilots made scores entitling them to the Navy "E". The high score was made by Lt. Comdr. H. C. Wick, with 28 hits out of 30 shots fired.

Officers Class Progressing Rapidly

The Naval Air Station at Pensacola, Fla., reports that Flight training class XIX is progressing very rapidly. This class is composed of 28 Naval officers and 3 Marine Corps officers. A report from the station is as follows. "Good weather has favored Class XIX. Today (Dec. 8) fourteen members of the class are ready for navigation and the remaining seventeen are on the last leg of their ten hour solo period in F5Ls. If weather continues good until the 22 of this month, it is hoped that this class will be qualified Naval Aviators, and that thirty-one new wings will be on parade."

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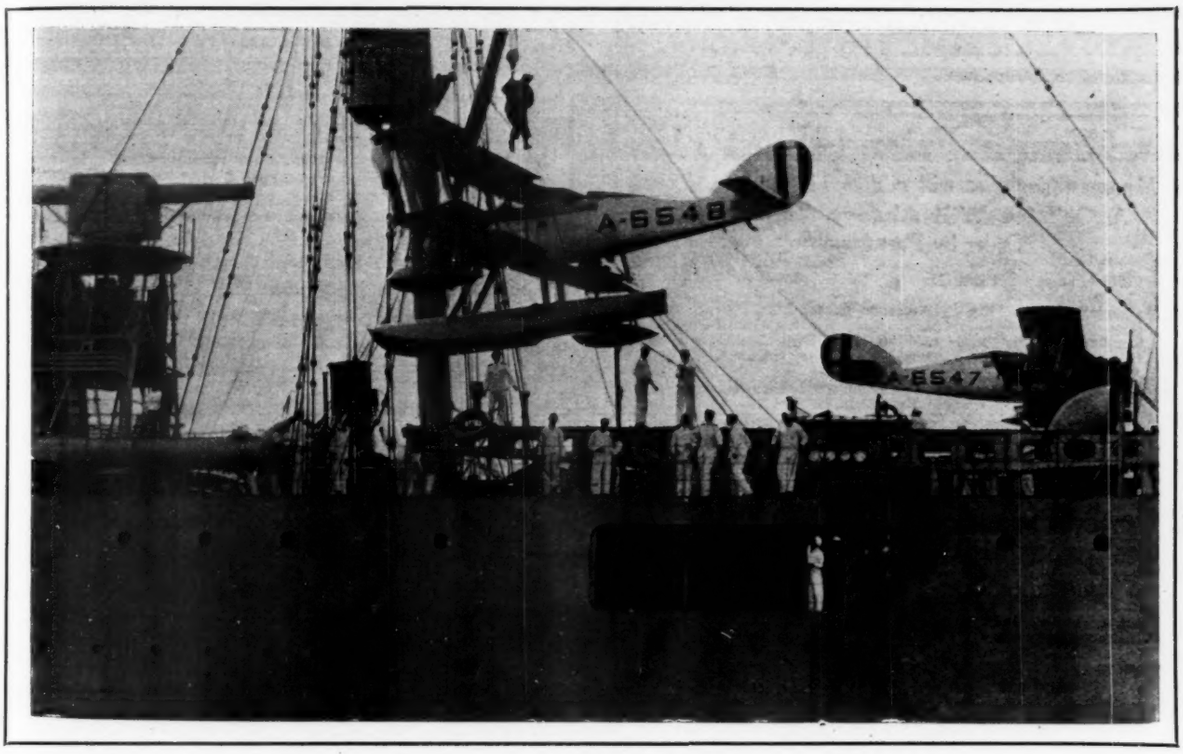

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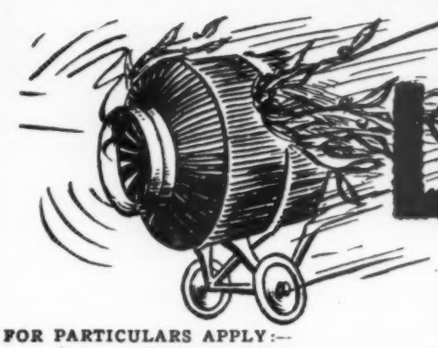

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CONGRATULATIONS

A notice in the issue of *Aviation* (New York) dated Aug. 6 records the fact that with that issue *Aviation* begins its eighth year of service to American aeronautics. One would like to take this opportunity of congratulating all concerned with that excellent paper on the good work which it has done.

Aviation is now the oldest aeronautical publication in the United States and it is the only weekly one that has survived. Quite a number of aviation papers have existed at one time or another in the States, beginning with the old *Aeronautics* and that cheerful little paper caller *Aero and Hydro* which was run in Chicago by Mr. Percy Noel, now of the European staff of the Philadelphia Public Ledger. Those pioneer papers died and so did the more flamboyant efforts which appeared during the wartime boom in aviation. * * *

Consequently *Aviation* remains as the only regular weekly free and independent aeronautical paper in the United States. It has always been remarkable for its cleanness in fighting and its impartiality on all controversial subjects. The paper and printing has been such as to rouse one's envy every time the weekly copies of *Aviation* have arrived. * * *

* * * Mr. Ladislas d'Orcy, the editor, is very much a pioneer of aviation. * * * His knowledge of aeronautics including both heavier and lighter than air craft is encyclopaedic and he has a habit of taking pains which result in *Aviation* being remarkable for the quite unusual accuracy of its facts and figures, that is to say unusual where journalism of any kind is concerned.

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